

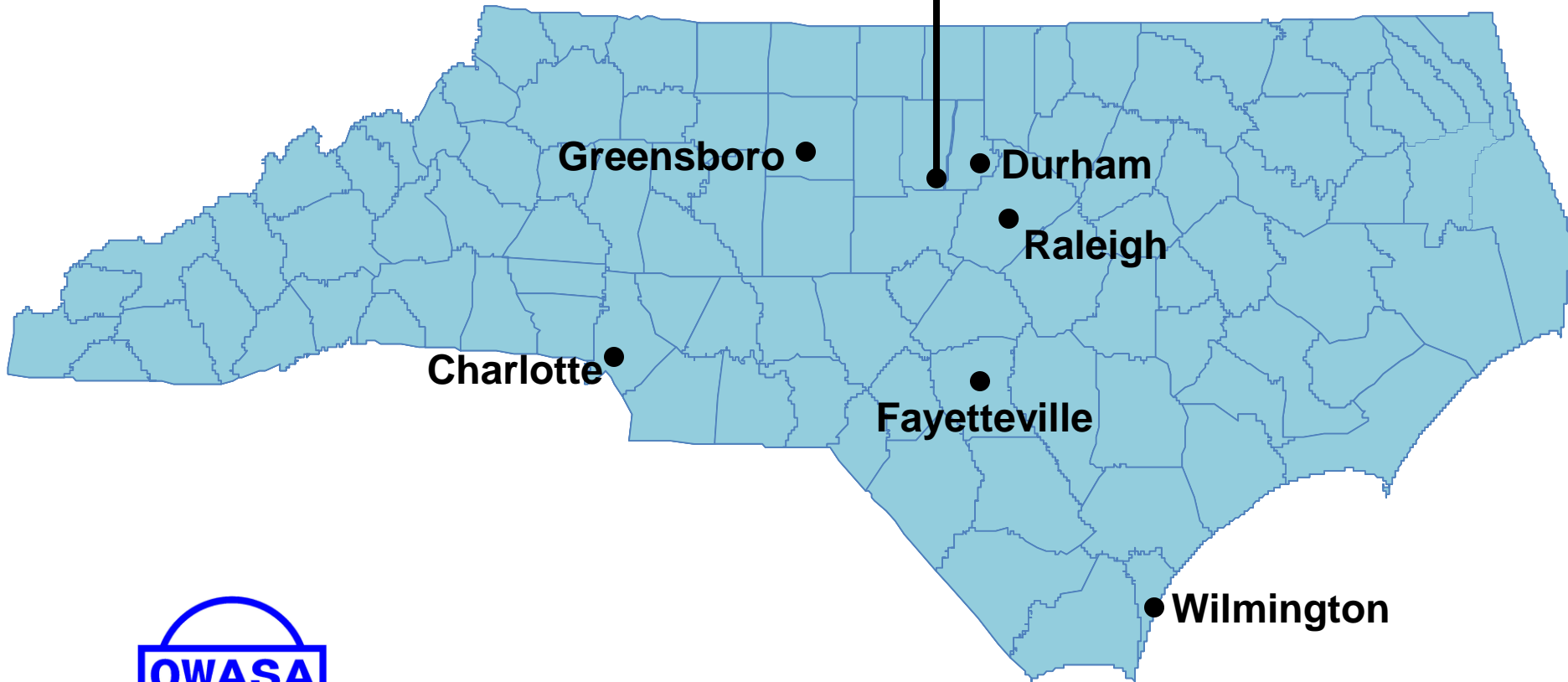
Orange Water and Sewer Authority Presentation

# **Jordan Lake Committee Legislative Research Commission**

March 19, 2014



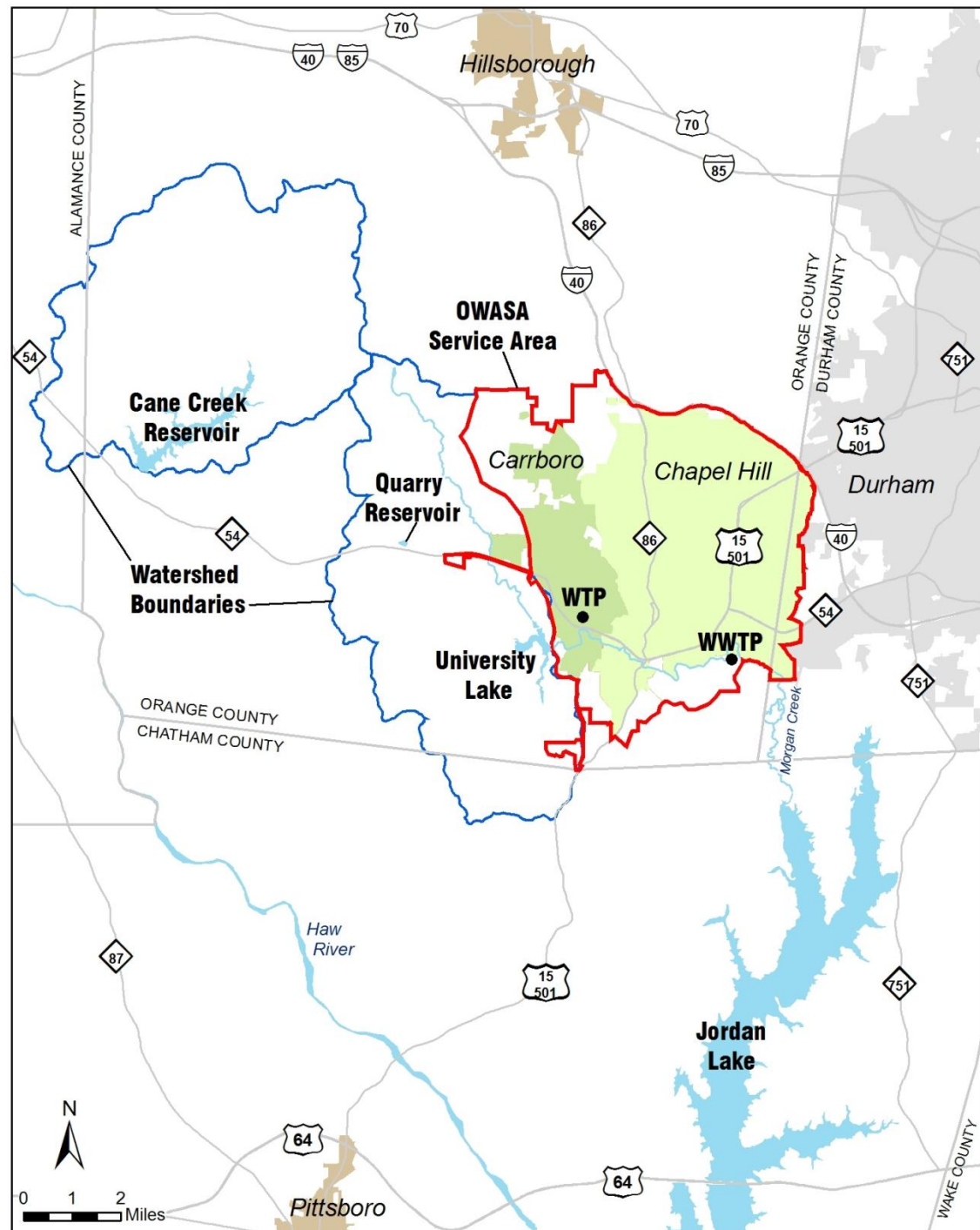
**OWASA**  
**Chapel Hill/Carrboro/UNC**



*A public, non-profit agency providing water, sewer  
and reclaimed water services to the Carrboro-  
Chapel Hill community in North Carolina.*

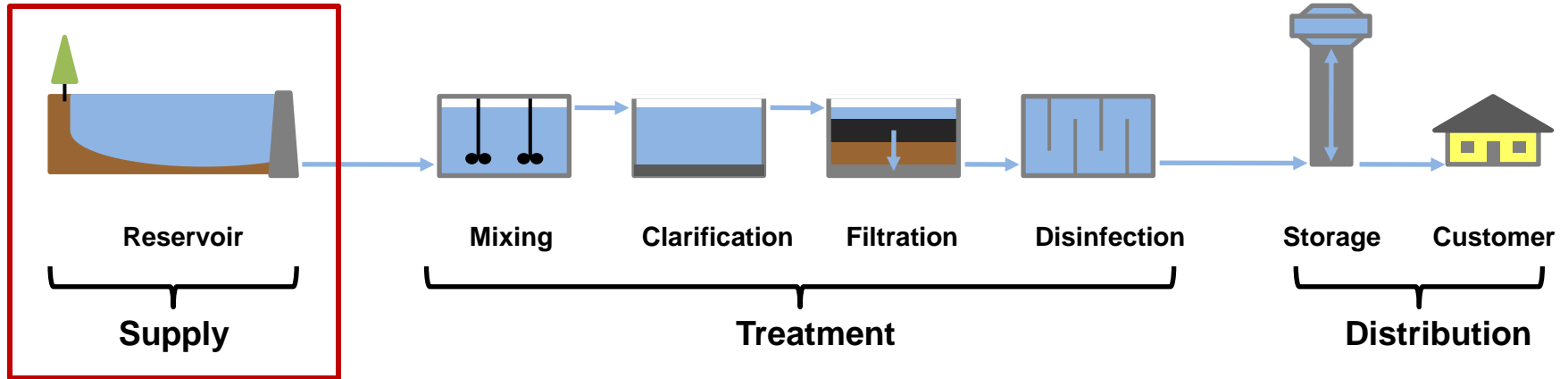
## *Orange Water and Sewer Authority*

- 80,000 people
- 21,000 accounts
- UNC 22% of sales
- 20 MGD Water Treatment Plant
- 14.5 MGD Wastewater Treatment Plant
- 3 MGD Reclaimed Water System



# ***OWASA provides drinking water***

## THE DRINKING WATER SYSTEM

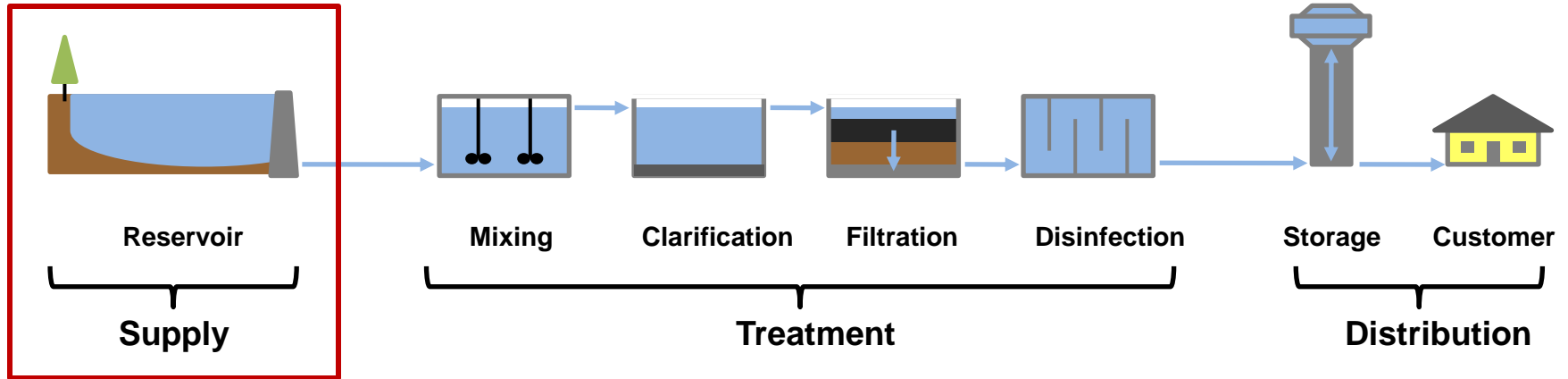


***University Lake***



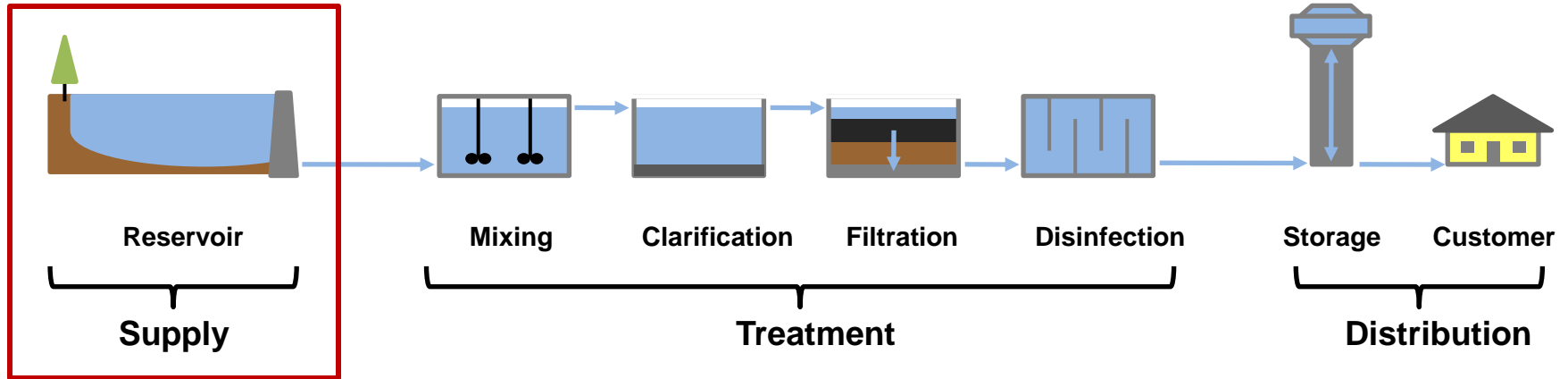
# ***OWASA provides drinking water***

## **THE DRINKING WATER SYSTEM**



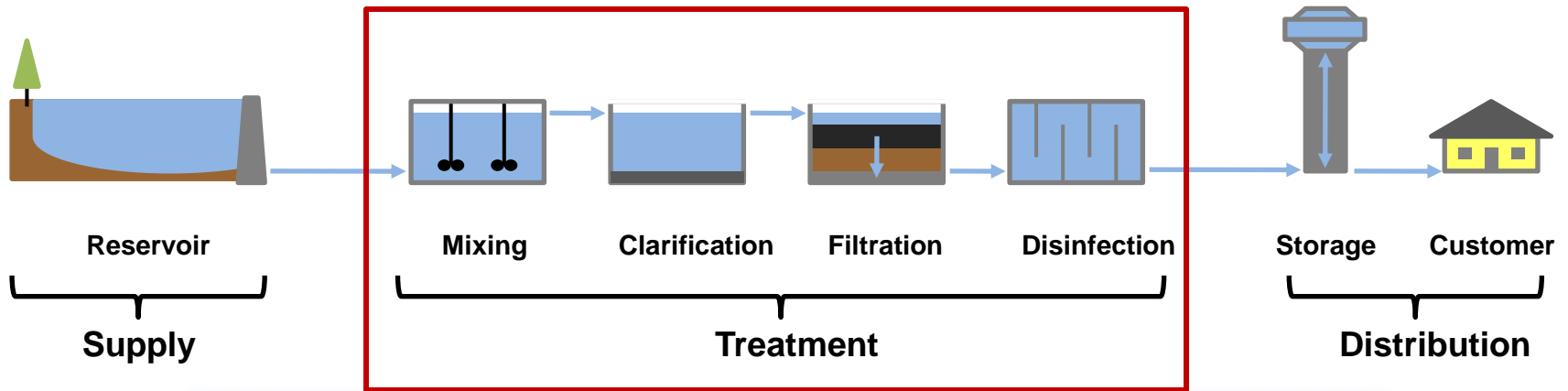
# *OWASA provides drinking water*

## THE DRINKING WATER SYSTEM



# ***OWASA provides drinking water***

## **THE DRINKING WATER SYSTEM**

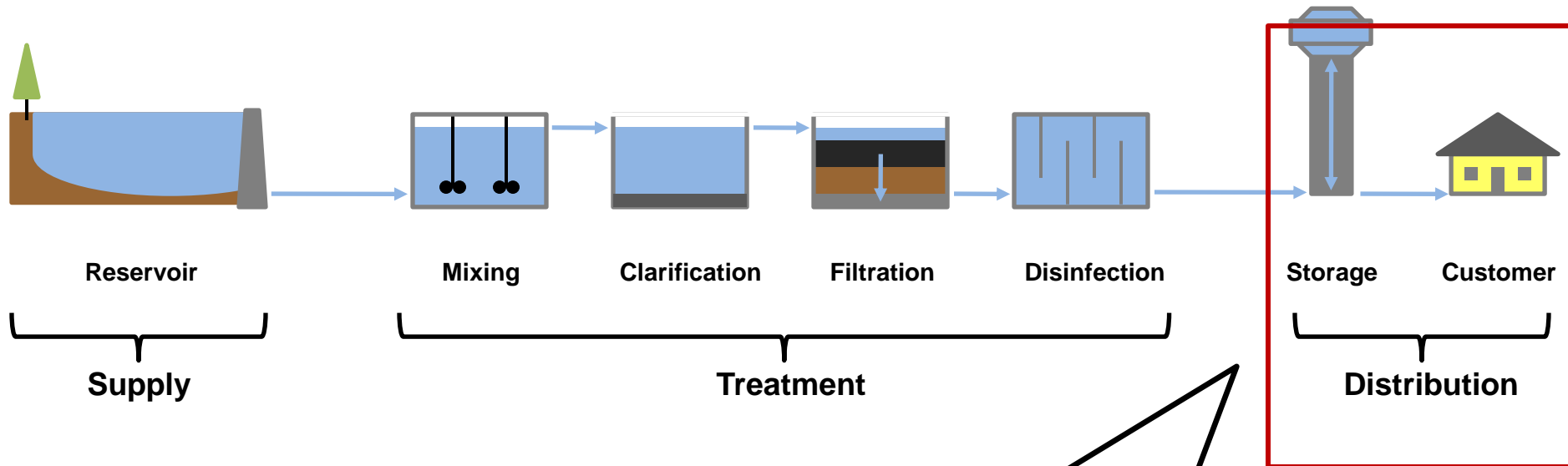


***Jones Ferry Road Water Treatment Plant***



# *OWASA provides drinking water*

## THE DRINKING WATER SYSTEM



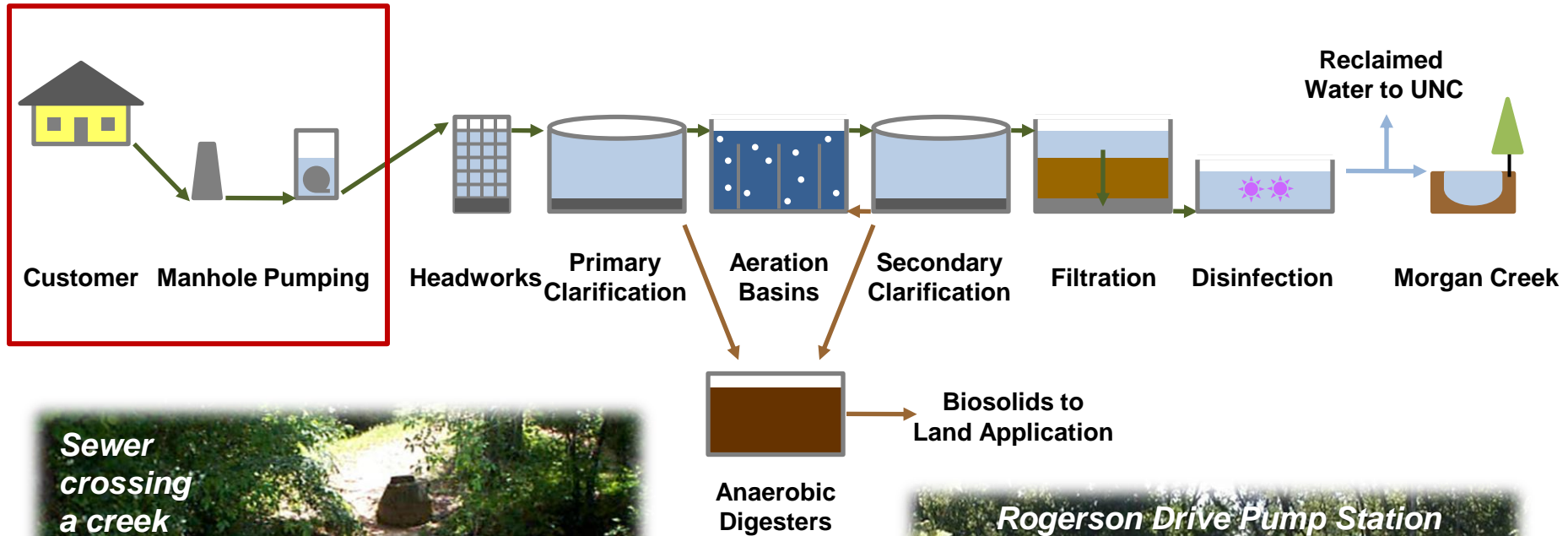
Includes interconnections with  
Durham, Hillsborough and  
Chatham County

**Jordan Lake Allocation = 5 MGD**

*Provides essential backup when  
needed*

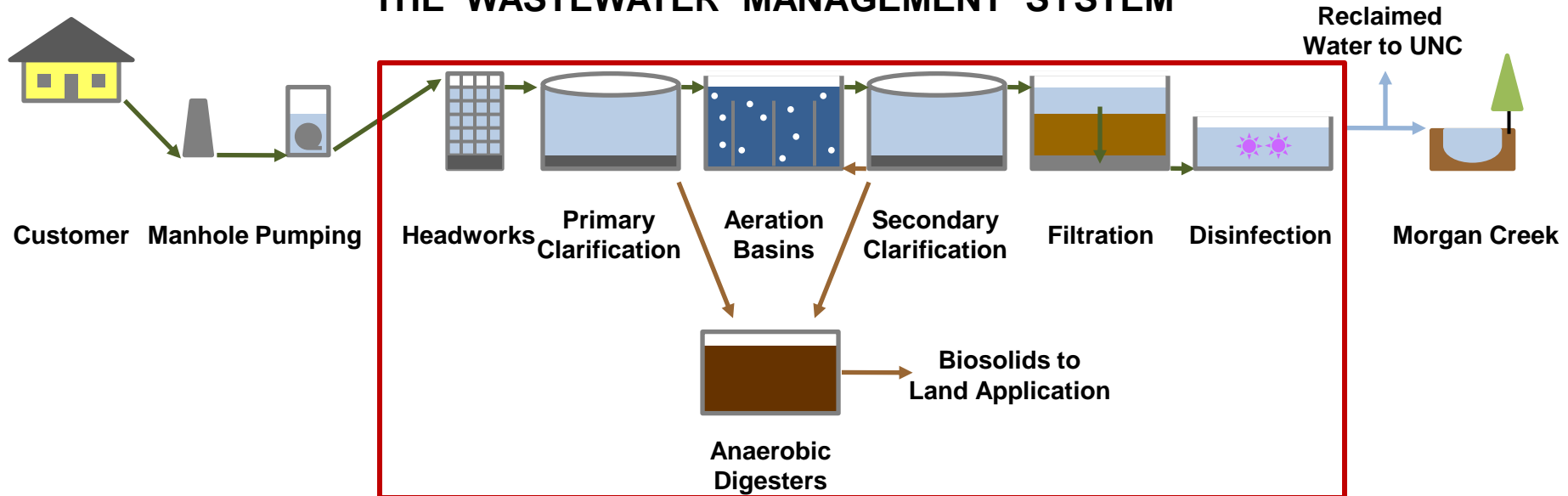
# ***OWASA manages wastewater***

## **THE WASTEWATER MANAGEMENT SYSTEM**



# ***OWASA manages wastewater***

## **THE WASTEWATER MANAGEMENT SYSTEM**

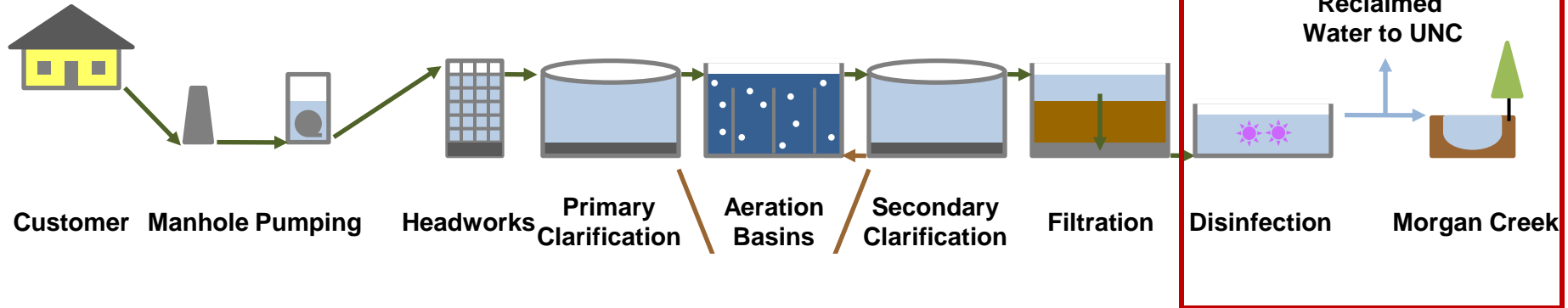


**Mason Farm  
Wastewater  
Treatment Plant**



# OWASA manages wastewater

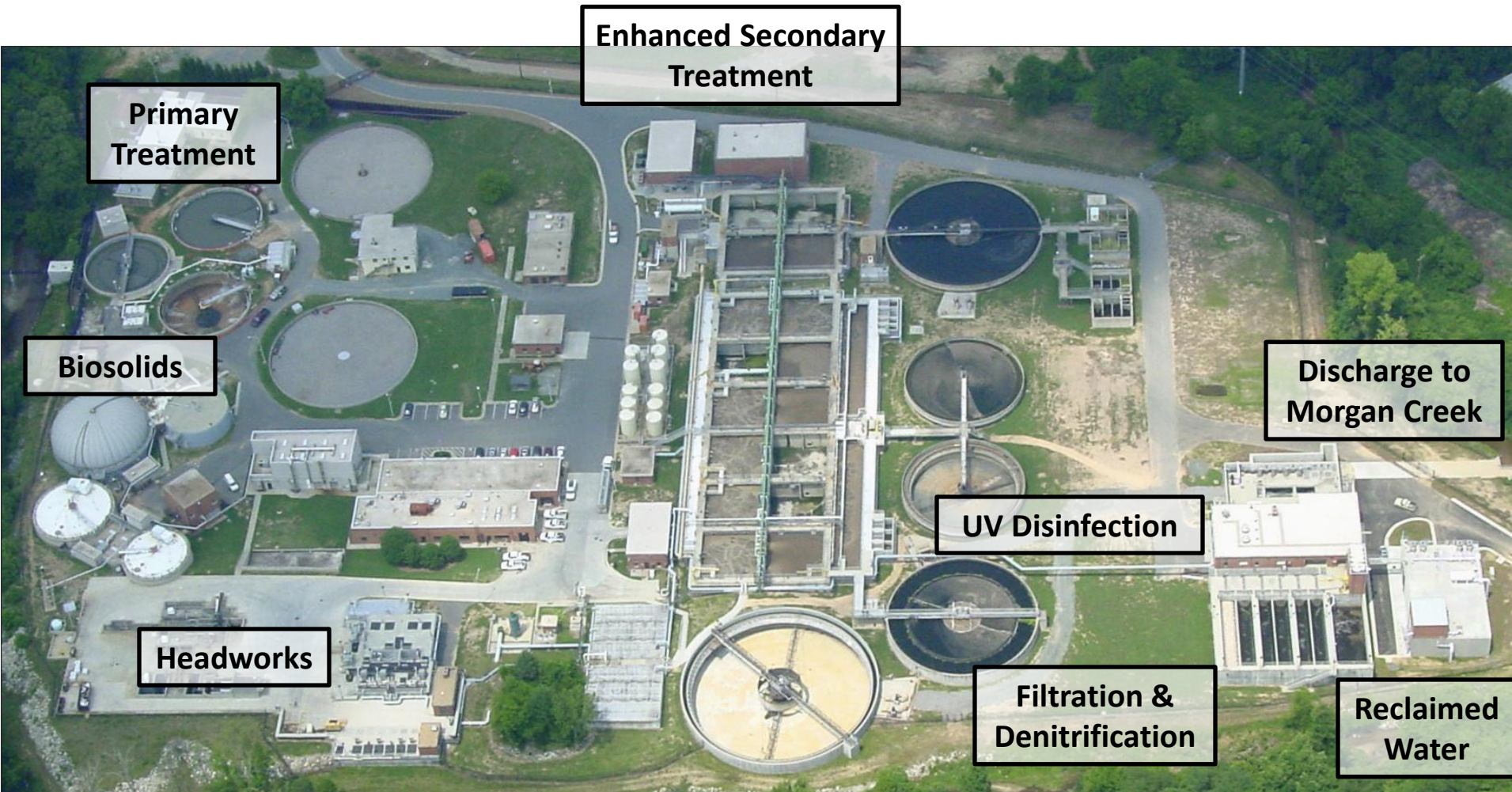
## THE WASTEWATER MANAGEMENT SYSTEM



**UNC uses  
reclaimed  
water for 30%  
of their total  
water demand**



# ***Mason Farm Wastewater Treatment Plant***

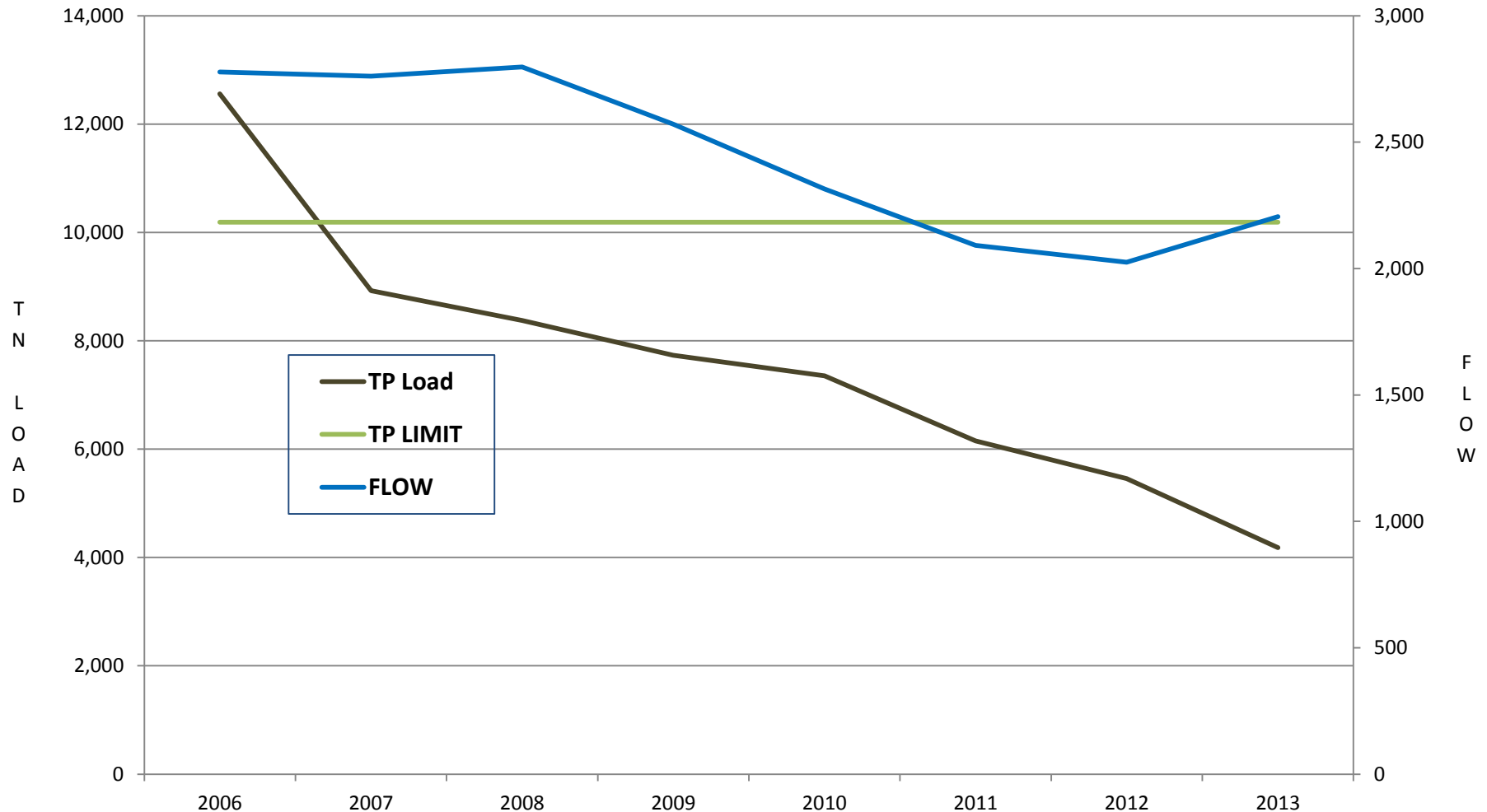


# WWTP Discharger Requirements

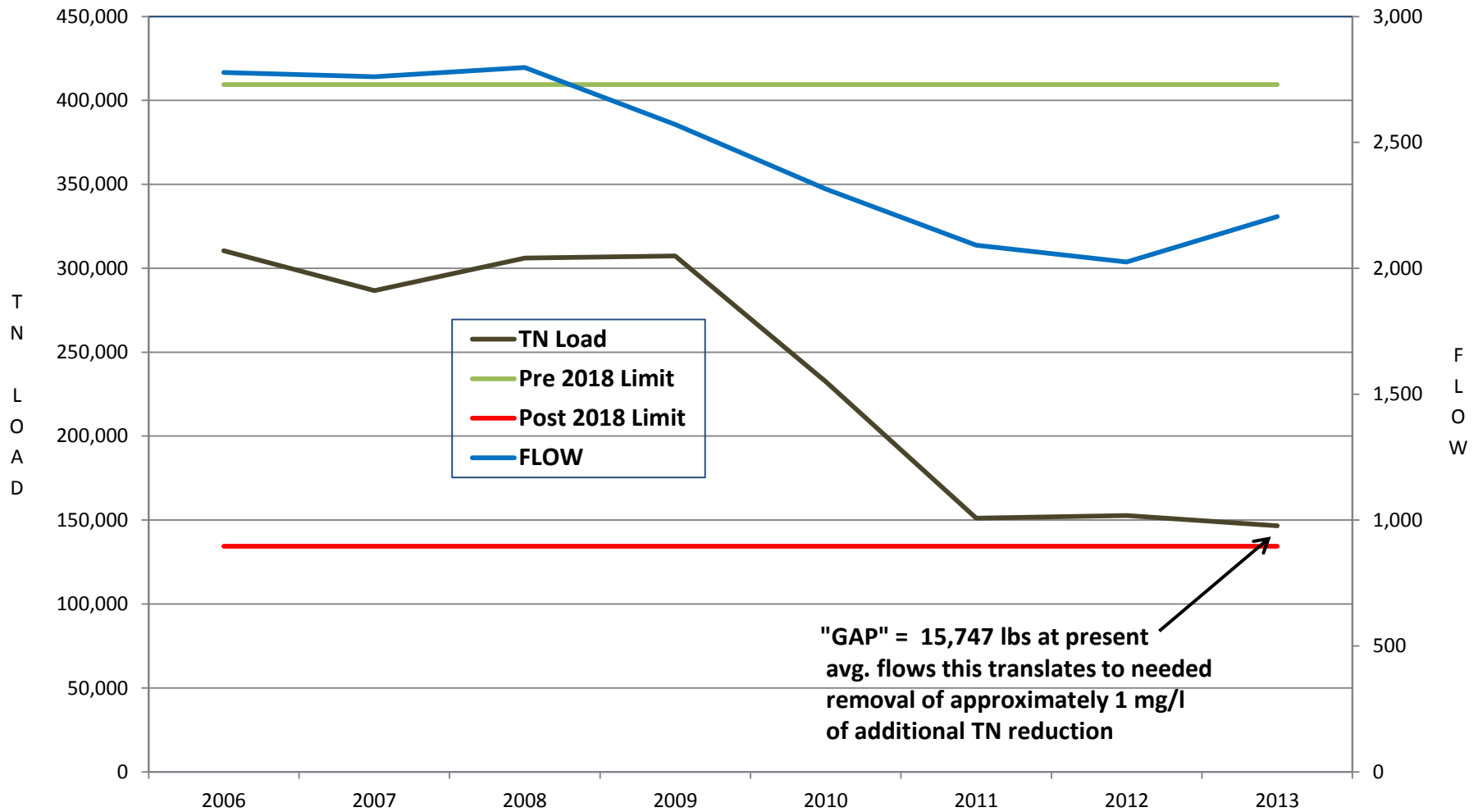
## Jordan Lake Rules

- Individual N and P Load Allocations (lbs/year)
- Upper New Hope N = 3.04mg/l P = 0.23 mg/l
- Compliance Dates P = 2010 N = 2018
- OWASA Fully Compliant with current NPDES Permit Requirements for N and P
- Recent NCDWR Presentation to JLR Committee “misrepresented” OWASA’s N compliance status

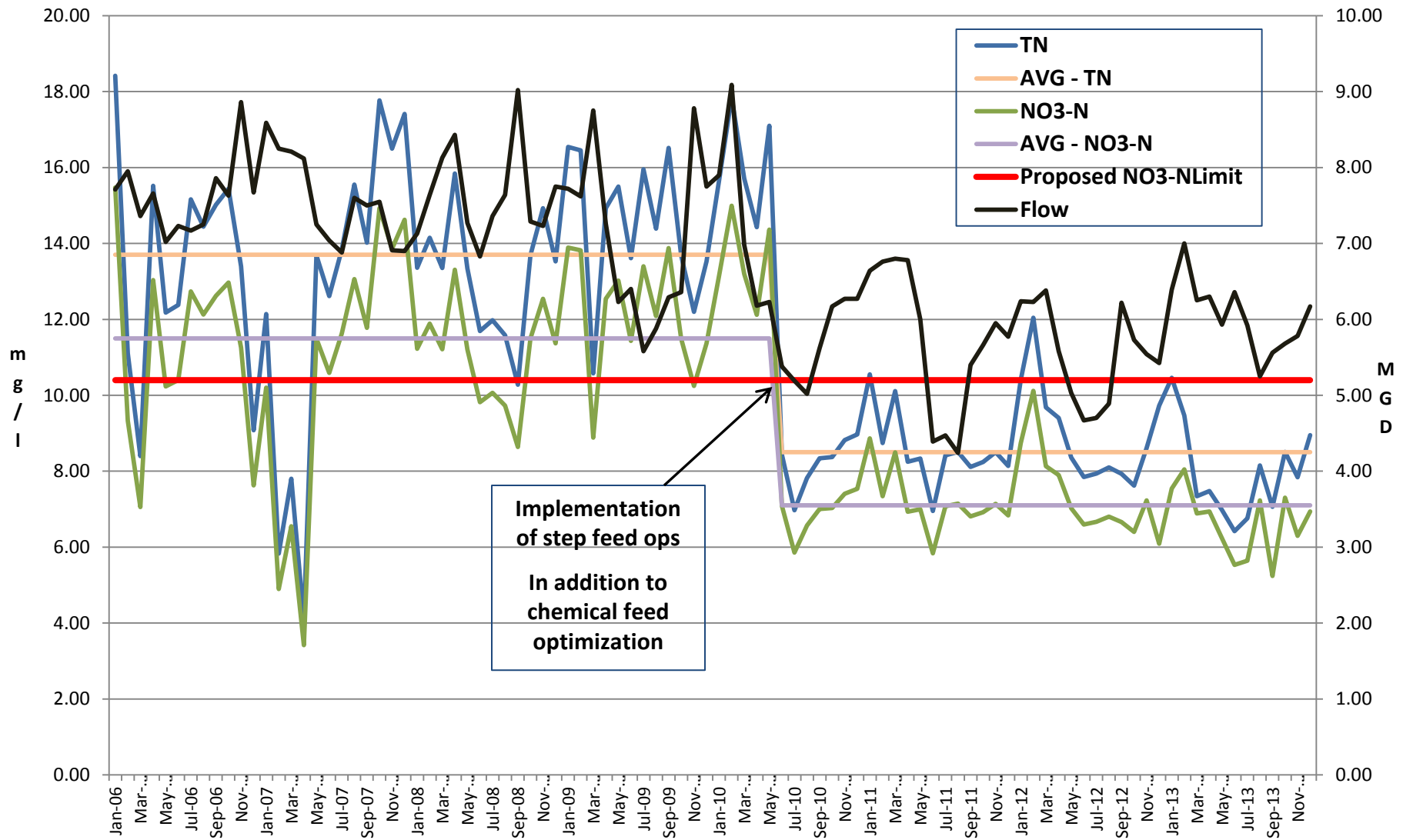
# Summary of TP Compliance – WWTP EFF



# Summary of TN Compliance – WWTP EFF



# WWTP Nutrient Optimization Strategies



# OWASA Capital Investments N and P Compliance

Capital Investments (current) = \$ 22.5 Million

- Fermenter Modifications - \$455,000 (P removal)
- Acetic Acid / Alum Improvements = \$472,000 (P removal)
- Nutrient Reduction/Optimization Study = \$234,000 (N and P removal)
- On-Line Nutrient Analyzers = \$170,000 (N and P Removal)
- NSL Pump Station = \$390,000 (P Removal)
- Aeration Basin Modifications = \$6.5 million (N and P removal)
- Secondary Clarifier Improvements = \$3.9 million (N and P removal)
- Effluent Filters = \$10.4 million (mostly N – but also some P removal)

Capital Investments (future) = \$ 1.9 Million +

- Internal Recycle - Activated Sludge System = \$900,000 (N removal)
- Side Stream Treatment = \$1M+ (N & P removal)

# OWASA On-Going O&M Costs N and P Compliance

## Chemical Utilization Annual Costs (current)

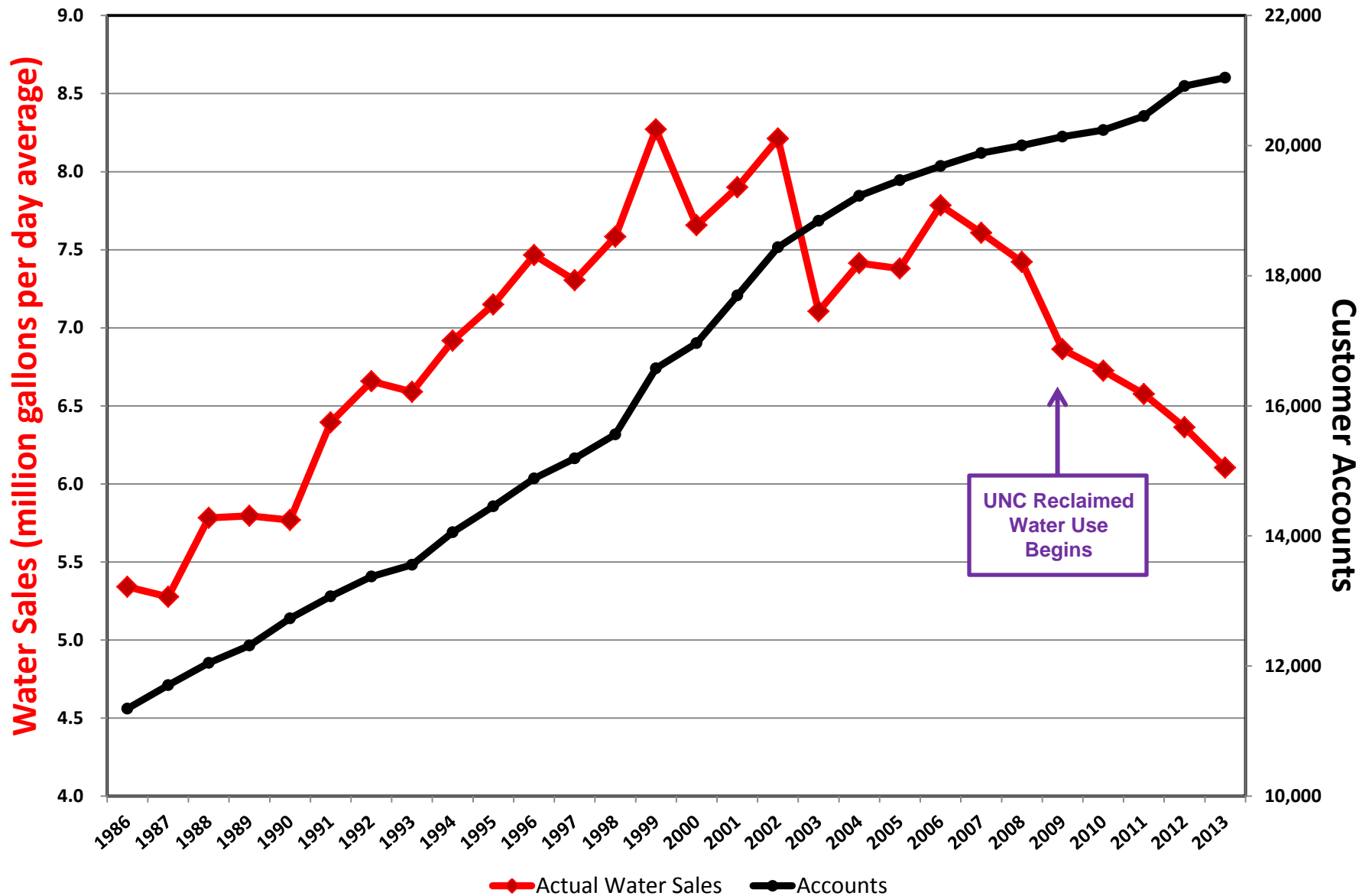
- Acetic Acid & Alum = avg. @ **\$300,000** (P removal)
- Caustic = avg. @ **\$250,000** (N removal)

## Chemical Utilization Annual Costs (future)

- Acetic Acid = **\$350,000 - \$500,000** additional annual costs to operate denitrification filters (N removal)

**Total Chemical Costs = Upwards of \$1 Million/Year**

# Water Sales Water Accounts



# Approved Rate Increases

2007	10%
2008	17%
2009	10%
2010	9%

Needed to Fund Capital Improvements  
(N & P Compliance)

# OWASA N and P Compliance

- Fully Compliant with NPDES P load allocation (10,188 lbs/year)
- Fully Compliant with current NPDES N load allocation (409,448 lbs/year)
- OWASA will be fully compliant with future NPDES N load allocation (134,375 lbs/year) when limit takes effect in 2018

John Kiviniemi

Wastewater Treatment and Biosolids  
Recycling Manager

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919-537-4352

[\*\*www.owasa.org\*\*](http://www.owasa.org)

*A public, non-profit agency providing  
water, sewer and reclaimed water  
services to the Carrboro-Chapel Hill  
community.*

